SEQUENCE LISTING

<110> BIOMERIEUX

      INSERM (INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE)

<120> Nucleic acid and protein sequences from the HXHV virus and uses thereof

<130> HXHV1

<160> 37

<170> PatentIn version 3.1

<210> 1
<211> 1362
<212> DNA
<213> virus

<400> 1
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gggataatcc gctgggctag cgcgatatgg ccgaaacgc cgtgccagcc agtagtcgag   240

actcaaccat cgccccgccc cgctgatgaa aagcgccacg agcgcagcca cggccggcac   300

cggtgaggtt tgccaatggc atatcagtcc tcccggcgcc cttactcgtt cttatcgcca   360

ctgcacgtgc cttcaatacg ggagccttcc tgcgccttct cggcagcggt caggctgtag   420

ccgccggcca gttcctgctc agcgaagggg atgctagtgg cgtgggcagt gaacgccatg   480

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cgccaggttg gcgccctcgc agcaatggac gaggcaggga tgcgggcgtt acagcgggcg   660

aaaaagattt ctcgtagccc gatgaaatac ggggcgctt tgctcgccag caatcgcggc   720

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tctggttgga ctgcatggcc gctgcgagca cgggcgttgt ggttctgttg ctggcccccc    900

tggttgagcg gctggtatgc cctgcccggc gagctgctga gcttcatcgg cgcgatcaat    960

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atcaagctgc tggcagtggc caacggactc tgggcgttgg catgccttgg catcgctacg   1080

atctttgccc cgctcatgac gctaccgggg ctttgtcatg tgctcggcga ggctgcatcc   1140

gtcgcaggcc tgggcatgct ggagtggaaa tggcgcaggc agctgctggt ggctggcgaa   1200

cagggcgttt cgactcagct tgtcgcggtc cagtaaccgt cacaggtatt caggcgaaga   1260

tccggcgatg gctgttcagg ccatcatcag ccctatcctt cagccctgtg aaagcggttc   1320

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<211> 562

<212> DNA

<213> virus

<400> 2

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aagcaatcgc cgaacggtac gcggtgatcg agcgctgccg cagcgactac cccattggga    180

tgatgtgccg ctgccttcaa gtgtcgacca gtgggttcta cgcctgggcc aggcgaaagc    240

cggggccgcg tgcccaggcg aattcgcgtc tcttggagcg catgcgtgaa atccacgagg    300

acagccgagg catcatcggc gcgcgtcgga tgcaggaaga cctcgccgac gaaggcatgc    360

ccgccagctt gaatcgggtg gcccgcgtca tggccaaggc cgggcttcag ggctggccgc    420

ggcgaaagaa gcgtggcttt ccgcgcaagc cgccgacgcg tcgtcccgag ggcgtcagga    480

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ccgagatcgt caccgacgag gg                                             562
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<210> 3

<211> 571

<212> DNA

<213> virus

<400> 3
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acccgctaca gcacaagaag ggaagctcgg gccgacgtct ttgcctacct ggagcggttc     180

cacgacccgc ggatgcgccg tagagttgcg aggcgtgacc gggagtttca agccttaatc     240

aaaccgtccg cggaaacggg gtagaacccg agtccactta ccgccggtgc ggcgcaggtc     300

gccgccccac accacgcagg ttaagtcgag ttccgaaccc tgcacctgaa actcagtggc     360

gacgtcttcg aggtagtacg acgtcttcgc ggtgatacaa gaaacgtgtg tcctccttgc     420

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<210> 4

<211> 1314

<212> DNA

<213> virus

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tgatgtgccg ctgccttcaa gtgtcgacca gtgggttcta cgcctgggcc aggcgaaagc     240

cggggccgcg tgcccaggcg aattcgcgtc tcttggagcg catgcgtgaa atccacgagg     300

acagccgagg catcatcggc gcgcgtcgga tgcaggaaga cctcgccgac gaaggcatgc     360

ccgccagctt gaatcgggtg gcccgcgtca tggccaaggc cgggcttcag ggctggccgc     420

ggcgaaagaa gcgtggcttt ccgcgcaagc cgccgacgcg tcgtcccgag ggcgtcagga     480

accttctgga gagggatttc tcggcgctcg aaccggagac gaagtgggta accgacatca     540

ccgagatcgt caccgacgag ggaaaactcc atctctgcgt cgtcctcgac ctgtacagca     600

aactcatcat gggatggtcg atgcatcacc ggcaggatcg ccacatggtg gttcgcgcgg     660

tacagatggc ggtttggcag cgcgagggcg gcgacgaggt gatcctgcat tccgatcgcg     720
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gcatgagcga ggtcggccat tgcggcgaca acgcagcatg tgagggattc ttcgggctac    840

tgaagcgaga gtggatctac caaacccgct acagcacaag aagggaagct cgggccgacg    900

tctttgccta cctggagcgg ttccacgacc cgcggatgcg ccgtagagtt gcgaggcgtg    960

accgggagtt tcaagcctta atcaaaccgt ccgcggaaac ggggtagaac ccgagtccac   1020

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ccctgcacct gaaactcagt ggcgacgtct tcgaggtagt acgacgtctt cgcggtgata   1140

caagaaacgt gtgtcctcct tgccggccaa aagccactgg ataaggtcga cctttaagcg   1200

cattcccata gcgtactggg acccctgatg ccgaggcacg aagtagcagg taacatcgtg   1260

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<211>   285

<212>   DNA

<213>   virus


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agcaatcgcc gaacggtacg cggtgatcga gcgctgccgc agcgactacc ccattgggat   180

gatgtgccgc tgccttcaag tgtcgaccag tgggttctac gcctgggcca ggcgaaagcc   240

ggggccgcgt gcccaggcga attcgcgtct cttggagcgc atgcg                    285
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<211>   141

<212>   DNA

<213>   virus



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caatcgccga acggtacgcg g                                             141
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<210> 7

<211> 825

<212> DNA

<213> virus

<400> 7

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gacagccgag gcatcatcgg cgcgcgtcgg atgcaggaag acctcgccga cgaaggcatg    180

cccgccagct tgaatcgggt ggcccgcgtc atggccaagg ccgggcttca gggctggccg    240

cggcgaaaga agcgtggctt tccgcgcaag ccgccgacgc gtcgtcccga gggcgtcagg    300

aaccttctgg agagggattt ctcggcgctc gaaccggaga cgaagtgggt aaccgacatc    360

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aaactcatca tgggatggtc gatgcatcac cggcaggatc gccacatggt ggttcgcgcg    480

gtacagatgg cggtttggca gcgcgagggc ggcgacgagg tgatcctgca ttccgatcgc    540

ggcgggcagt tcatcagcga tacgtaccag aagttcctcg gcagccatgc cttggtctgc    600

agcatgagcg aggtcggcca ttgcggcgac aacgcagcat gtgagggatt cttcgggcta    660

ctgaagcgag agtggatcta ccaaacccgc tacagcacaa gaagggaagc tcgggccgac    720

gtctttgcct acctggagcg gttccacgac ccgcggatgc gccgtagagt tgcgaggcgt    780 .

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<210> 8

<211> 207

<212> DNA

<213> virus

<400> 8

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cagcgatacg taccagaagt tcctcggcag ccatgccttg gtctgcagca tgagcgaggt    180

cggccattgc ggcgacaacg cagcatg    207
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<210> 9

<211> 87

<212> DNA

<213> virus

<400> 9
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tctcgctctt ttcatgagcg gggcggg   87

<210> 10

<211> 87

<212> DNA

<213> virus

<400> 10
agcgcattcc catagcgtac tgggacccct gatgccgagg cacgaagtag caggtaacat   60
cgtgtcatgc acaagcaatc ggatcat   87

<210> 11

<211> 198

<212> DNA

<213> virus

<400> 11
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tcttcgcggt gatacaagaa acgtgtgtcc tccttgccgg ccaaaagcca ctggataagg   120
tcgacctttta agcgcattcc catagcgtac tgggacccct gatgccgagg cacgaagtag   180
caggtaacat cgtgtcat   198

<210> 12

<211> 111

<212> DNA

<213> virus

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<210>  13

<211>  84

<212>  DNA

<213>  virus


<400>  13
gcgatacgta ccagaagttc ctcggcagcc atgccttggt ctgcagcatg agcgaggtcg       60
gccattgcgg cgacaacgca gcat                                             84


<210>  14

<211>  795

<212>  DNA

<213>  virus


<400>  14
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atcgccgaac ggtacgcggt gatcgagcgc tgccgcagcg actaccccat tgggatgatg      180
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atggcggttt ggcagcgcga gggcggcgac gaggtgatcc tgcattccga tcgcggcggg      720
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agcgaggtcg gccat   795

<210>   15

<211>   156

<212>   DNA

<213>   virus

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cggcgacgag gtgatcctgc attccgatcg cggcgggcag ttcatcagcg atacgtacca   120

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<210>   16

<211>   201

<212>   DNA

<213>   virus

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gggcgtcagg aaccttctgg agagggattt ctcggcgctc gaaccggaga cgaagtgggt   120

aaccgacatc accgagatcg tcaccgacga gggaaaactc catctctgcg tcgtcctcga   180

cctgtacagc aaactcatca t   201

<210>   17

<211>   171

<212>   DNA

<213>   virus

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catgcgtgaa atccacgagg acagccgagg catcatcggc gcgcgtcgga tgcaggaaga   120

cctcgccgac gaaggcatgc ccgccagctt gaatcgggtg cccgcgtca t   171

<210>   18

<211> 95

<212> PRT

<213> virus

<400> 18

Ser Arg Asp Ser Thr Ile Ala Pro Ala Pro Leu Met Lys Arg Ser Leu
1   5   10   15

Gly Ser Ser Ala Asn Cys Arg Val Leu Pro Arg Asn Glu Ile Phe Tyr
            20   25   30

Glu Thr Arg Gln Arg Thr Ser Arg Ser Asn Arg Arg Thr Val Arg Gly
        35   40   45

Asp Arg Ala Leu Pro Gln Arg Leu Pro His Trp Asp Asp Val Pro Leu
    50   55   60

Pro Ser Ser Val Asp Gln Trp Val Leu Arg Leu Gly Gln Ala Lys Ala
65   70   75   80

Gly Ala Ala Cys Pro Gly Glu Phe Ala Ser Leu Gly Ala His Ala
                85   90   95

<210> 19

<211> 47

<212> PRT

<213> virus

<400> 19

Ser Arg Leu Asn His Arg Ser Arg Pro Ala Asp Glu Lys Val Ala Arg
1   5   10   15

Leu Lys Arg Glu Leu Ser Arg Val Thr Lys Glu Arg Asp Phe Leu Arg
            20   25   30

Asp Ala Ala Ala Tyr Phe Ala Lys Gln Ser Pro Asn Gly Thr Arg
        35   40   45

<210> 20

<211> 275

<212> PRT

<213> virus

<400> 20

Met Met Cys Arg Cys Leu Gln Val Ser Thr Ser Gly Phe Tyr Ala Trp
1   5   10   15

Ala Arg Arg Lys Pro Gly Pro Arg Ala Gln Ala Asn Ser Arg Leu Leu
            20   25   30

Glu Arg Met Arg Glu Ile His Glu Asp Ser Arg Gly Ile Ile Gly Ala
        35   40   45

Arg Arg Met Gln Glu Asp Leu Ala Asp Glu Gly Met Pro Ala Ser Leu
    50   55   60

Asn Arg Val Ala Arg Val Met Ala Lys Ala Gly Leu Gln Gly Trp Pro
65   70   75   80

Arg Arg Lys Lys Arg Gly Phe Pro Arg Lys Pro Pro Thr Arg Arg Pro
                85   90   95

Glu Gly Val Arg Asn Leu Leu Glu Arg Asp Phe Ser Ala Leu Glu Pro
            100   105   110

Glu Thr Lys Trp Val Thr Asp Ile Thr Glu Ile Val Thr Asp Glu Gly
        115   120   125

Lys Leu His Leu Cys Val Val Leu Asp Leu Tyr Ser Lys Leu Ile Met
    130   135   140

Gly Trp Ser Met His His Arg Gln Asp Arg His Met Val Val Arg Ala
145   150   155   160

Val Gln Met Ala Val Trp Gln Arg Glu Gly Gly Asp Glu Val Ile Leu
                165   170   175

His Ser Asp Arg Gly Gly Gln Phe Ile Ser Asp Thr Tyr Gln Lys Phe
                180   185   190

Leu Gly Ser His Ala Leu Val Cys Ser Met Ser Glu Val Gly His Cys
            195   200   205

Gly Asp Asn Ala Ala Cys Glu Gly Phe Phe Gly Leu Leu Lys Arg Glu
    210   215   220

Trp Ile Tyr Gln Thr Arg Tyr Ser Thr Arg Arg Glu Ala Arg Ala Asp
225   230   235   240

Val Phe Ala Tyr Leu Glu Arg Phe His Asp Pro Arg Met Arg Arg Arg
                245   250   255

Val Ala Arg Arg Asp Arg Glu Phe Gln Ala Leu Ile Lys Pro Ser Ala
            260   265   270

Glu Thr Gly
        275

<210> 21

<211> 69

<212> PRT

<213> virus

<400> 21

Met Val Asp Ala Ser Pro Ala Gly Ser Pro His Gly Gly Ser Arg Gly
1   5   10   15

Thr Asp Gly Gly Leu Ala Ala Arg Gly Arg Arg Arg Gly Asp Pro Ala
            20   25   30

Phe Arg Ser Arg Arg Ala Val His Gln Arg Tyr Val Pro Glu Val Pro
        35   40   45

Arg Gln Pro Cys Leu Gly Leu Gln His Glu Arg Gly Arg Pro Leu Arg
    50   55   60

Arg Gln Arg Ser Met
65

<210> 22

<211> 29

<212> PRT

<213> virus

<400> 22

Met Pro Arg His Glu Val Ala Gly Asn Ile Val Ser Cys Thr Ser Asn
1   5   10   15

Arg Ile Met Ser Ser Arg Ser Phe His Glu Arg Gly Gly
            20   25

<210> 23

<211> 29

<212> PRT

<213> virus

<400> 23

Arg Cys Glu Trp Leu Thr Ser Pro Gly Arg Ile Gly Leu Cys Ser Thr
1   5   10   15

Ala Pro Leu Met Thr Asp His Val Leu Leu Arg Ile Met
            20   25

<210> 24

<211> 66

<212> PRT

<213> virus

<400> 24

Thr Ser Asn Arg Val Arg Cys Arg Phe Ser Leu Pro Ser Thr Lys Ser
1   5   10   15

Thr Thr Arg Arg Arg Arg Pro Ser Val Leu Phe Thr His Gly Gly Gln
            20   25   30

Arg Gly Phe Ala Val Pro Tyr Pro Arg Gly Lys Leu Ala Asn Gly Tyr
        35   40   45

Arg Val Pro Val Gly Ser Ala Ser Ala Arg Leu Leu Leu Tyr Cys Arg
    50   55   60

Thr Met
65

<210>   25

<211>   37

<212>   PRT

<213>   virus

<400>   25

His Arg Arg Arg Arg Pro Leu Val Val Asp Glu Arg His Tyr Leu Phe
1   5   10   15

Arg Thr Asp Glu Lys Gly Ala Leu Leu Trp Gln Ile Leu Asp Val Lys
                20   25   30

Leu Arg Met Gly Met
        35

<210>   26

<211>   28

<212>   PRT

<213>   virus

<400>   26

Arg Tyr Thr Gly Ser Thr Gly Arg Cys Gly His Arg Pro Arg Cys Cys
1   5   10   15

Ser Arg Pro Arg Gly Asn Arg Arg Cys Arg Leu Met
                20   25

<210>   27

<211>   265

<212>   PRT

<213>   virus

<400>   27

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Leu Arg Ser Ser Asp Arg Thr Val Leu Ser Arg Ser Lys Lys Arg Ser
            20              25              30

Ala Ala Ala Tyr Lys Ala Phe Cys Asp Gly Phe Pro Val Arg His Asp
        35              40              45

Leu Ala Ala Ala Gln Arg Leu Pro His Trp Asp Asp Val Pro Leu Pro
    50              55              60

Ser Ser Val Asp Gln Trp Val Leu Arg Leu Gly Gln Ala Lys Ala Pro
65              70              75              80

Gly Arg Ala Trp Ala Phe Glu Arg Arg Lys Ser Arg Met Arg Ser Ile
            85              90              95

Trp Ser Ser Leu Arg Pro Met Met Pro Ala Arg Arg Met Gln Glu Asp
            100             105             110

Leu Ala Asp Glu Gly Met Pro Ala Ser Leu Asn Arg Val Ala Arg Val
    115             120             125

Met Ala Lys Ala Gly Leu Gln Gly Trp Pro Arg Arg Lys Lys Arg Gly
    130             135             140

Phe Pro Arg Lys Pro Pro Thr Arg Arg Pro Glu Gly Val Arg Asn Leu
145             150             155             160

Leu Glu Arg Asp Phe Ser Ala Leu Glu Pro Glu Thr Lys Trp Val Thr
            165             170             175

Asp Ile Thr Glu Ile Val Thr Asp Glu Gly Lys Leu His Leu Cys Val
            180             185             190

Val Leu Asp Leu Tyr Ser Lys Leu Ile Met Gly Trp Ser Met His His
    195             200             205

Arg Gln Asp Arg Pro His Gly Gly Ser Arg Gly Thr Asp Gly Gly Leu
210             215             220

Ala Ala Arg Gly Arg Arg Arg Gly Asp Pro Ala Phe Arg Ser Arg Arg
225             230             235             240
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Ala Val His Gln Arg Tyr Val Pro Glu Val Pro Arg Gln Pro Cys Leu
          245   250   255

Gly Leu Gln His Glu Arg Gly Arg Pro
         260   265

<210> 28

<211> 52

<212> PRT

<213> virus

<400> 28

Arg Cys Ser Arg Trp Met Thr Thr Arg Ala Thr Cys Ile Ala Thr Gln
1   5   10   15

Cys Arg Ser Pro Pro Ser Ser Thr Ile Arg Cys Glu Ser Arg Pro Pro
        20   25   30

Cys Asn Met Leu Ser Val Tyr Trp Phe Asn Arg Pro Leu Trp Ala Lys
        35   40   45

Thr Gln Leu Met
    50

<210> 29

<211> 67

<212> PRT

<213> virus

<400> 29

Pro Gln Gly Arg Arg Phe Phe Arg Pro Lys Gly Arg Leu Gly Gly Val
1   5   10   15

Arg Arg Gly Ser Pro Thr Leu Phe Arg Arg Ser Leu Ser Lys Glu Ala
            20   25   30

Ser Ser Gly Ser Val Phe His Thr Val Ser Met Val Ser Ile Thr Val
            35   40   45

Ser Ser Pro Phe Ser Trp Arg Gln Thr Thr Arg Ser Arg Tyr Leu Leu
        50   55   60

Ser Met Met
65

<210> 30

<211> 57

<212> PRT

<213> virus

<400> 30

Ala Gln Ala Leu Arg Phe Gly Pro Gly Arg Ala Trp Ala Phe Glu Arg
1   5   10   15

Arg Lys Ser Arg Met Arg Ser Ile Trp Ser Ser Leu Arg Pro Met Met
            20   25   30

Pro Ala Arg Arg Ile Cys Ser Ser Arg Ala Ser Ser Pro Met Gly Ala
            35   40   45

Leu Lys Phe Arg Thr Ala Arg Thr Met
        50   55

<210> 31

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Sense primer

<400> 31
cccgccccgc tgatgaaaag   20

<210> 32

<211> 21

<212> DNA

<213> Artificial sequence

<220>

<223> Antisense primer

<400> 32
gcgatggttg agtctcgact a   21

<210> 33

<211> 17

<212> DNA

<213> Artificial sequence

<220>

<223> Antisense primer

<400> 33
aggtagcagg cgatatc   17

<210> 34

<211> 19

<212> DNA

<213> Artificial sequence

<220>

<223> Sense primer

<400> 34
ccttctggag agggatttc   19

<210> 35

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Antisense primer

<400> 35
tgttacctgc tacttcgtgc   20

<210> 36

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Sense primer

<400> 36
tagagttgcg aggcgtgacc   20

<210> 37

<211> 21

<212> DNA

<213> Artificial sequence

<220>

<223> Antisense primer

<400> 37
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